LOUISIANA Conservationist

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Conservation Pledge

I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country—its soil and minerals, its forests, waters and wildlife

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The 1967 Louisiana wild turkey season opens April 1 and continues through April 23. There is growing interest in wild turkey hunting in the state for two important reasons. One is that the wild turkey is North America's largest game bird and the other is that a restocking program being carried out by the Louisiana Wild Life and Fisheries Commission has greatly extended the range where turkeys were once present but depleted through over-hunting. As the program continues, the Commission hopes to establish flocks in every area of the state where there is suitable range.
Photo by Bob Dennie

LOUISIANA Conservationist

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EDITORIAL

WATER has been so common and easy to get in Louisiana we seldom think how important it is to man, wildlife and plants. Next to the air we breathe, it is the most important thing in our lives; it is probably our most valuable natural resource.

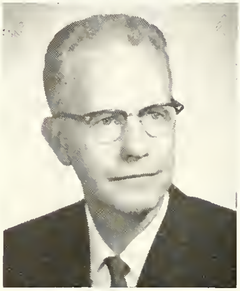
Louisiana has been blessed with an abundance of water. Because of the low flat topography we have millions of acres of semi-flooded swamps and marshes, thousands of miles of streams and thousands of acres of lakes. In addition we have millions of acres of shallow water in the edge of the Gulf. Louisiana is a Sportsman's Paradise because of this water-land relationship. These water areas provide us with an abundance of fish, both sport and commercial; crayfish, frogs, waterfowl, fur animals and other wildlife. The marshes serve as a nursery ground for 80 percent of the commercial shrimp in the Gulf and many of the marine fish.

What appeared to be an unlimited supply of good clean water has dwindled for various reasons, some of which are justifiable but others are not. During the period when demand on water is increasing, the quality has been, in many instances, markedly degraded.

Drainage and pollution are the two most important factors in water quality deterioration. Drainage permits rapid runoff and therefore quick loss; it does not necessarily reduce the quantity. It does reduce the amount of water seeping into the soil and into our underground supplies. Much of the drainage is for agricultural purposes and is permanent. Little can be done to restore conditions which result in slow runoff. Construction of many huge reservoirs for flow regulations is currently on the increase.

Pollution has reduced the quality of much of the water in Louisiana, however, most types of pollution can be corrected but the cost in some cases may be high.

Industrial wastes from sweet potato canneries, sugar mills, paper mills and other processing or manufacturing plants unless treated properly cause serious pollution. Agricultural pesticides have caused many fish kills. Some oil field operators dump salt brine into streams. Oil field accidents result in the spilling of many barrels of oil into our waters annually. Recent checks along the coastal marsh and-inshore gulf areas revealed over 100 oil slicks on the water, some covering many acres. Careless dredging operations create high turbidity that prevents growth of fish foods and, when sufficiently intense, destroys fish. Many cities in Louisiana dump untreated sewage into our streams, a practice in coastal areas that sometimes forces the closure of oyster beds. Polutants of the types mentioned render water unfit for wildlife or human use and often unsuitable for industrial purposes.



LESLIE L. GLASGOW
Director

Although most firms feel a strong moral obligation to protect our water, some do not; therefore, legal action becomes necessary.

Louisiana's pollution laws are antiquated and need strengthening. The serious pollutor should be penalized but in many cases this is a practical impossibility. We need pollution laws with teeth in them.

The Stream Control Commission has made thorough studies of the water quality in most of our streams, or at least in the major ones. Quality varied from excellent to highly polluted. Following these studies, standards for water quality have been proposed for major streams. They are based on requirements to sustain suitable fish populations, and to maintain water in a condition suitable for home and industrial use.

Public hearings on these proposed criteria will soon be held at which every interested person will be given an opportunity to present his views about water standards in his community. These hearings will be held in major cities throughout the state. Dates, times and places of hearings will be publicized widely. Every interested person or group should attend one or more of these meetings and present a brief statement in writing and orally indicating their desire to keep clean water in Louisiana. ✢

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Profile in Conservation

SENATOR, COMMISSIONER, DIRECTOR

Steve Harmon

VISUALIZE, if you will, a state with its forests runneth over with whitetail deer and wild turkey; ravines and hardwood bottoms home sweet home to squirrels and rabbits; its meadows and bogs chocked full with quail, doves, woodcock and snipe; the rivers, lakes, ponds and bayous churning with bass, bream, white perch and catfish, and the Gulf's saltwater jumping with speckled trout, red snappers, pompano and Spanish mackerel, and you call it paradise.

That's the kind of Louisiana Ernest S. Clements, former commissioner of the old Conservation Department and director of the Wild Life and Fisheries Commission, has dreamed of since his boyhood dating back to the days of early 1900.

"I was, perhaps, more fortunate than many Louisiana boys, in having a father who had a great love of the outdoors. At an early age he included me in his fishing and hunting adventures. I became imbued with the same love for sportsmanship in the outdoors that my father personified. Down through the years it has always been a source of great pride for me that I could look back to the days when my father taught me to fish and hunt, and at the same time look forward to being able to do something to insure that the coming generations in this great State would also be able to enjoy these same delights," Mr. Clements told this writer during a recent interview.

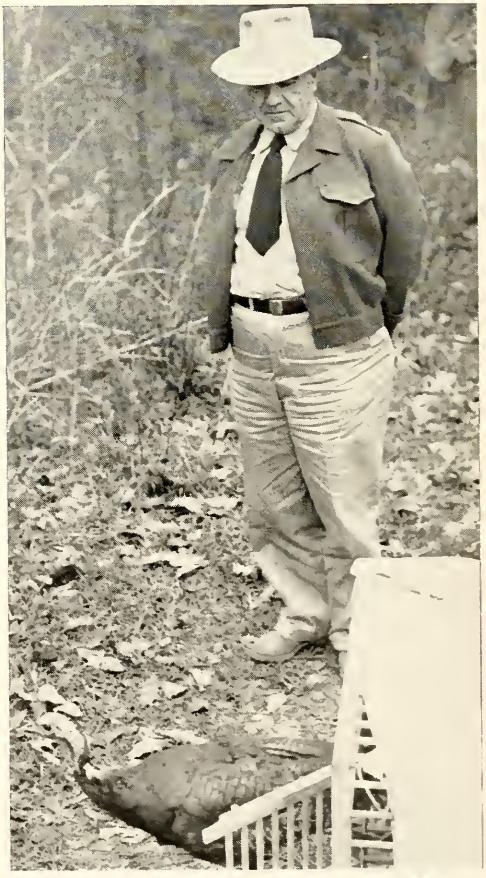
Ernest Clements was born in the town of Oberlin, Calcasieu, now Allen Parish, on April 17, 1898. He is married to the former Irene Woods of Lecompte and they have one daughter, Mrs. Victor E. Snapp of Houston, Texas; grandson Richard, a student at Louisiana State University and grandaughter Linda Snapp, a high school student in Houston. Mr. Clements is a graduate of Louisiana State University and a veteran of World War I. On his return to Oberlin, at the conclusion of the war, he took a job in a law office and became court reporter for Allen Parish.

Following his stint as a court reporter and law clerk, Ernest Clements was appointed chief deputy clerk of court in his home parish and later was named secretary-treasurer of the police jury. In 1936 he was elected to the State Senate from the 14th district comprising the parishes of Allen, Beauregard, Calcasieu, Cameron and Jeff Davis. During his freshman year he served as chairman of the Senate conservation committee, and for eleven months in 1939-40 he acted as commissioner of the old Conservation Department. On Thursday, May 13, 1948 former Governor Earl K. Long named him Commissioner of the Department of Wild Life and Fisheries. His term of office, from May, 1948 through October, 1952, was one of documented progress for the department.

Immediately upon taking the oath of office in 1948, Commissioner Clements began a complete overhaul of the Department of Wild Life and Fisheries. In addition to major repair to the entire department physical plant, Clements launched one of the most gigantic game and fish restocking programs never before attempted at that time. He courted Governor Long and members of the Louisiana Legislature for necessary funds, and during the regular session of 1948 came out with enacted legislation and appropriation that would mark the beginning of sound wildlife resources management in the state.

"I must admit that with the encroachment of progress, industry, and rural development commercially, the future of Louisiana's natural wildlife resources looked alarmingly dim during those trying times. I accepted the commissioner job with the sole hope that I would be able to do something for the conservation and restoration of our God-given fish and game resources. During my term of office, I had the full cooperation of many of the outstanding sportsmen and conservationists in the state and to all of these people I remain forever grateful."

The present marine laboratory at Grand Terre came into being during the administration of Commissioner Clements. While on a visit to Rockport, Texas on a mission to secure deer from that state's fish and game department to restock in Louisiana, he asked to see the marine laboratory in that Texas city. He was so impressed with the marine research being conducted there that he came back home and talked Governor Long into letting him have enough money to convert the old Fort Livingston facility into a home base for marine research work on the Louisiana Gulf Coast.



This wild turkey, trapped in Virginia in 1949, was personally released by Commissioner Clements in Louisiana. (Photo by Edouard Morgan in 1949)

Today this installation is regarded as one of the finest in the nation.

Ernest Clements firmly believed, and continues to believe, in the wise management of the state's wildlife resources, and, although he gave and took on some minor actions, he, nevertheless, was tough when a major problem had to be tackled. Never a darling of the state's news media, he was commended in the editorial columns of the old New Orleans Item in September 1948 for courage in closing the waters of Lake Borgne and Lake Robin in the day after the trawling season for shrimp opened. The Item's editorial reads:

"Wildlife Commissioner Clements acted with commendable promptness and vigor in closing Lakes Borgne, Robin and other inshore bodies of water to shrimp trawls and seines for three weeks. The season had been opened in response to the request of commercial seafood fishermen.

"But initial catches showed that almost nothing but undersize shrimp were being taken. If continued, this destructive practice would have made dreadful inroads on one of the state's most valuable wildlife resources. Half the nation's annual shrimp yield comes from Louisiana waters. The fact that more than 500 small commercial fishing craft were operating in Lake Borgne alone on the first day gave even a layman an idea of the havoc such a slaughter of immature and undersized shrimp would cause.

"Commissioner Clements might have temporized. It is all the more to his credit that he was completely realistic in taking the course he did by issuing an immediate order banning further operations in these waters until the shrimp population attained commercial size."

Realizing that land and water acquisition, through outright purchase or long-term lease, held the future of fishing and hunting opportunities in Louisiana, Mr. Clements, early during his administration of the Department of Wild Life and Fisheries, embarked on a program to 'nail down' any large acreage tracts for wildlife management purposes. Within a short period of time several large areas were on the 'dotted line' under long-term leases. These large tracts included: West Bay in Allen Parish; Red Dirt, in Natchitoches and Vernon; Evangeline in Rapides; Sabine in Sabine; Catahoula in Grant and Winn; Caldwell in Caldwell, Union in Union; Livingston in Livingston; Jackson-Bienville in Jackson-Bienville Parishes; and the Zemurray tract in Tangipahoa.

"Following the signing of these tracts of land, we soon realized that our efforts would be void if game was not sufficient in huntable populations. We set out to do something about the lack of game and fish in these areas and proceeded to canvas our own Louisiana and several other states for animals and birds to restock.

"We traveled by train and bus to Texas, Pennsylvania, Ohio, Virginia, Wisconsin and other states in this search.

"In addition to the seed animals and birds we received from other states, I will always remember the generosity of Mr. Rucie Moore, a great conservationist and gentleman from Gum Cove in Cameron Parish. Mr. Moore let us trap many deer from his vast acreage in the Southwest Louisiana marshland. These deer were transplanted to other sections of the state in order to provide more deer hunting areas for the sportsmen.

Commissioner Clements initiated long conferences with his chiefs of information and education, enforcement and fish and game divisions, the late Mel Washburn, Julius Book, John S. Campbell and the late Major James Brown.

"It was agreed that we could stock the forests, fields and streams to capacity with game and fish but our efforts would all be in vain if we did not get the full cooperation of the people in the areas where the game and fish had been transplanted. We set our plan in action. Personal contacts and appearances by representatives of the department were made by all of us to citizen groups such as civic clubs, sportsmen's leagues, schools and churches. Each spokesman pleaded for local help in stamping out poachers and violators. Cooperation was splendid and the results speak out when we see some of these same areas today sporting huntable numbers of deer, turkey and squirrel. And our streams continue to cough up limits of bass, bream, white perch and catfish."

Ernest Clements was never one to squander a dollar. He kept tight reins on the department's kitty. While thumbing through the Department of Wild Life and Fisheries budget one evening, he glanced at an item for the Pass-a-Loutre public shooting grounds account: $250.00 per month for gas to heat the main camp at the Plaquemines Parish facility. He blew his stack.

"Texas Oil Company, lessee of the 60,000 plus acre Pass-a-Loutre tract for mineral rights, wanted to build a reservoir to hold their waste in and we needed a pipeline from their nearest gas well to our main camp. So we got together. Texas Company got their reservoir and we got a new pipeline and free gas to the main camp."

The pride and joy of Commissioner Clements' administration was the introduction of the LOUISIANA CONSERVATIONIST as a 28-page slick paper publication. To secure initial subscribers for the magazine he made a deal with the young struggling Louisiana Wildlife Federation whereby each new member of the federation would receive the publication free of charge.

Ernest Clements continues to pass on his knowledge of the outdoors to the younger generation. Here he is with his grandson Richard Snapp on a recent quail hunt in Allen Parish. (Photo by Bob Dennie).

"Most of the federation boys had been very helpful to us in the department by button-holing members of the Louisiana Legislature to see that we received an adequate appropriation and conservation laws with teeth in them. It was a case of 'you scratch my back and I'll scratch yours. I never regretted the decision. We were printing 30,000 copies, press run, in two years." (Editor's note; the present circulation is near 100,000.) I've always felt that the LOUISIANA CONSERVATIONIST belonged to the people of Louisiana. Its messages should be carried in such a style of writing that both young and old, rich and poor, professional and layman can understand the meaning," the former commissioner-director added. He reiterated that the magazine should continue to be a circulation free one to citizens of Louisiana as long as the commission appropriation comes from the sale of hunting and fishing licenses and other commission natural resource interests.

Realizing that instant communication is vital to any law enforcement agency, Commissioner Clements, during the early years of his administration, installed a two-way radio system for the Department of Wild Life and Fisheries. In September 1950 a transmitting set and tower were operating from the department's boat wharf at West End in New Orleans.

"This new innovation of rapid transmission of messages for the department kept the main office and the wharf in constant touch with our enforcement officers in the field and on the streams. Mobile units were installed in department vehicles, boats, planes, stationary units at headquarters such as Marsh Island, Grand Pass, Grand Terre, Rockefeller, Pass-a-Loutre, Bay Gardene and others. In addition to the increased arrests of violators, the new communication system saved the department both time and money."

Ernest Clements, the young man, coming home from World War I, where he served as a 2nd lieutenant in a machine gun company, running the gamut of public office and trust, from court reporter, deputy clerk of court, secretary of the police jury, state senator, commissioner of conservation and department of wildlife and fisheries, director of the Wild Life and Fisheries Commission, is presently chairman of the Louisiana Public Service Commission. He was first elected a member of this commission in 1956, following his directorship of the Wild Life and Fisheries Commission the same year. He has left a heavy foot-print in the annals of conservation in his native state and nation. It is refreshing to note that his interest in conservation and the wise use of our natural resources is as vigorous today as it was at the turn of the century.

The late Havilah Babcock, author of "Quails 'n Such", "How Good Are Your Fishing Manners" and many other books on fishing and hunting, in a personal autograph, wrote these words: "To Ernest S. Clements, who has performed valiant services for game and fish conservation in his own and other states."

Louisiana is truly a "Sportsman's Paradise" proclaims the Pelican State's license plate and Ernest Clements is ready and willing, at any time, to elaborate on the subject. ✢

LOUISIANA'S FABULOUS FISHING

McFadden Duffy

LOUISIANA is said to have more bridges, both large and small, than any other state in the nation. That's because there are countless thousands of miles of water in the form of lakes, rivers, bayous, impoundments and farm ponds. The latter have increased at a great rate as Louisiana's cattle industry and irrigation expanded, and continues to expand. Stockmen need available water supplies for growing herds and farmers need water for agricultural crops.

Industrial expansion has created many large water impoundments as reserves for industry highly dependent upon water. Many impoundments have been constructed by the state for recreational purposes. All of this adds up to a lot of water and it goes without saying that plenty of water means plenty of fish. Bass are the most popular fish for inland sport fishermen, but those bodies of water contain crappie, blue gills, catfish, bar fish and other species which also have great appeal for anglers.

Stock ponds and industrial and state constructed impoundments add greatly to the supply of freshwater game fish. In the case of stock ponds, it is amazing how many fish can be produced under proper management. In large industrial impoundments, where proper management is exercised, some of the finest fishing in the state can be found.

Add these man-made sources of sport fishing to the network of lacelike bayous, rivers and lakes and there is little doubt why more than 200,000 fishing licenses were sold last year. And those sales do not cover approximately a similar number of fishermen who do not have to purchase fishing licenses under present state laws, because they are cane pole anglers and do not need licenses. Throw in those youngsters under 16 years of age, who are not required to have licenses, and it's a pretty safe bet that Louisiana has a half-million anglers, not to mention a substantial number of non-resident anglers who visit the state each year. Some of them fish on brief "trip licenses" and others, particularly from the neighboring states of Texas, Arkansas and Mississippi, purchase annual non-resident fishing licenses.

And in Louisiana they find what they seek! Tight lines, humming reels, bobbing corks, bending rods and fish. Louisiana is blessed with the greatest variety of fish of any state in the country, but the Louisiana Wild Life and Fisheries Commission is engaged in a program to improve what might be called the best fishing in the country.

Introduction of new species is now considered not only a tool of management, but a means of providing additional fish for the angler. This is a relatively new study in the state, but progress is being made. Two new species introduced into the state look promising. These are the striped bass and the walleye.

Both are active predators that grow to large sizes, over 10 pounds. The harvest of gizzard shad by these fish is of great interest. If they will help control the shad, both should be widely distributed throughout the state.

For the sport fisherman, the question naturally comes to mind: How will this benefit the fishermen? The answer is that it will benefit sport fishermen in two ways. The walleye is an outstanding game fish that is widely sought after in the more northern states. It often reaches sizes in excess of 15 pounds. The striped bass is also a highly prized game fish that sometimes reaches a weight of 35 pounds or more. These would make a welcome addition to any fisherman's catch.

And by helping to control the shad they will benefit other sport fish also. This will greatly bolster the present supply of game fish which is already high, thus offering additional sport.

It might be pointed out that striped bass have occurred in Louisiana in limited numbers but

Here a young girl looks thoughtfully at a crappie which was caught from a pond. Called sac-a-lait in the southern parishes and white perch in the northern parishes, they are one and the same, available in all bodies of freshwater. Photos by Bob Dennie

Bullgills are usually the first fish young anglers start with. This young girl is admiring her string of "perch." They are plentiful and found in fresh waters all over the state.

Properly-managed stock ponds such as this one offer fine bass and bream fishing, in addition to serving the purpose for which they are constructed. This "stay-at-home" fishing is about the easiest reached.

they have been taken only in those streams emptying into the gulf east of the Mississippi River. In recent years the catch records from those streams have shown a definite decline.

Interest in the possibility of stocking this species in Louisiana lakes has been heightened by the apparent success of introductions in adjacent states.

An agreement was made with the South Carolina Wildlife Resources Department in the spring of 1965. In exchange for 450,000 striped bass fry, the Commission agreed to raise the fry and furnish all data obtained to South Carolina free of any charge, with all expenses of the operation to be borne by the Commission.

These fry were obtained on May 4, 1965 and transported in plastic bags containing water and oxygen by aircraft to Louisiana. Flight time was five hours and an elevation of 8000 feet was maintained. Three hundred sixty thousand of the fry were placed in an eight-acre pond at the Beechwood fish hatchery near Alexandria. The remaining 90,000 were divided equally in two one-acre ponds at the Monroe hatchery.

The ponds into which the fry were placed contained heavy blooms of zooplankton. These blooms were obtained through the use of hay applied approximately seven to 10 days in advance of the stocking. The pond at Beechwood was also stocked with 100 pounds of fathead minnow brood fish.

At the end of the project year the fingerlings had obtained an average length of three inches and were growing rapidly. Limited examinations of striped bass stomach contents indicated that the minnows were not being utilized at that time.

The ponds at the Monroe hatchery were treated differently in an effort to determine the most desirable methods of cultivating these fish. Each of these ponds received 50 pounds per acre of ammonium nitrate in addition to the hay treatment. One pond was stocked with 30 pounds of fathead brooders. The other pond received approximately 20 pounds of intermediate size bluegills 30 days after the stocking of striped bass. At the end of the project year, the striped bass in both ponds seemed to be growing equally well.

Additional efforts to improve Louisiana's freshwater fishing came in the obtaining of green walleye eggs and sac fry from Nebraska. This initial attempt proved unsuccessful but efforts continued. Walleye fry were secured at the North Platte Hatchery in May of 1965. D'Arbonne Lake near Farmerville was selected for stocking because the riprap on the dam and highways of the newly established lake appeared adequate for spawning. In addition, the depth of the lake assured relatively cool water all year.

The walleye fry were sown in lines across 2,000 acres of the open water of the lake. An additional 500,000 fry were obtained from Georgia and placed in the lake in the same manner.

If stocking is successful, Louisiana fishermen will be able to enjoy the catching of another outstanding North American game fish. Time alone will tell about the walleye, but no efforts are being spared to improve the state's already fabulous fishing.

About seven months ago, striped bass were also stocked in D'Arbonne Lake and the proposed Toledo Bend Reservoir. These fish resemble the native white bass or bar fish when they are small. If one over five pounds is caught, it will probably prove to be a striped bass.

All lakes in the state will not be acceptable for stocking but if the fish take, other lakes and

A string of bass like these make up an average catch. In addition to being a fine food fish, bass provide real angling pleasure with their aerial tactics and dogged runs.

certain streams flowing into the gulf will be stocked.

While fisheries biologists are working away to further improve fishing, anglers throughout the state are only remotely interested. They've got it good already and they know it. When spring arrives, the balmy days find folks fishing everywhere. Some fishermen start even earlier and have real sessions with crappie because these fish school when they are ready to spawn. This makes them about first on the angler's list, followed closely by bream. Both species feed readily when they are bedding and spawning.

This is not true of bass. They rarely will take any lure or bait offered to them when they're spawning; but afterwards, anglers get some of the best bass fishing of the year. It tapers off somewhat in the hot months but picks up again in the fall. Since late summer and fall marks the start of the hunting seasons and many anglers are also hunters, bass do not get the working over they receive in the spring.

No other state offers so many diversified places to fish. They have overflow or backwaters areas, many large lakes and impoundments, upland streams and lazy, moss-shaded bayous, lagoons and marshland ponds.

In the Florida parishes, there are streams where anglers can find float fishing. It's as highly productive form of fishing as can be found in the Ozarks, but is much more rugged. In those narrow, flowing streams, anglers can find spotted bass (Kentucky bass). They will also find log jams and stumps where they have to pull the boat over. It's not easy going but float trips are available. Guides are not. Contrary to popular opinion, the spotted bass is not a true smallmouth bass. There are none in Louisiana, but you'll hear fishermen refer to the Kentucky bass as "smallmouths."

There's also the rock bass which local anglers call "goggle eye." Their range is limited generally to those parishes east of the Mississippi and north of Lake Pontchartrain.

Where there's water in Louisiana, there's freshwater fishing; and Louisiana has a lot of water. ✣

National Wildlife Week Highlights Public Lands

THE IMPORTANCE and variety of the public lands which all citizens own, will be emphasized in the 1967 National Wildlife Week observance. It is scheduled for March 19-25, and the theme, "This is Your Land," will continue to be promoted for the remainder of the year.

Members of the Louisiana Wildlife Federation and the Louisiana Wild Life and Fisheries Commission are inviting all citizens to join in learning about their local, state and federal lands and helping to promote public use of them wherever possible.

"Public land begins with the local picnic grounds and includes state preserves and ranges as well as National forests and parks. These areas often already are heavily used, but we must develop plans for them for even greater use tomorrow, State Wildlife Week Chairman Joe L. Herring points out. "We should become interested and learn about our public lands not being used and work to see that they provide for wildlife or recreation, and that they are managed under good conservation practices."

The Louisiana Wildlife Week Chairman pointed out that much public property, especially in cities and towns, includes neglected building sites and lots which could become recreation areas. There are state lands used for water storage, or game management, or commercial forestry which could have a dual purpose of also providing needed areas for campers and sportsmen.

"We must take a close look at all of the ways our public lands are and can be made available," Herring reminded. We must campaign to see that the people in charge of these areas, including elected officials, work to develop full use of these tax-free lands.

Today, it has become a practice to mourn the passing of other and allegedly better times when the world was less crowded, seemed to move slower, and cost less to enjoy. These "good old days" are also remembered for the ample supply of open spaces where a person could get out-of-doors.

True, the population is on the rise, along with most prices, and the pace of day-to-day living has picked up. But, the out-of-doors and relaxing open spaces are still around in amounts greater than we may realize. They number many millions of acres and are known as the public lands. These are any lands managed by local, state or Federal governmental agencies. Public lands range from National Parks to local picnic grounds, states Herring.

Locally these lands may include vacant lots, unused school grounds and nearby abandoned farms. Couldn't these locations be tomorrow's parks and recreation grounds? ✣

FREE RANGING DOGS

Kenneth C. Smith

GAME MANAGERS are all generally agreed that one of the most serious problems with which they are confronted in attempting to establish and build game populations today in Louisiana is the stray dog. How serious is he and why is he a problem in the first place? Suppose we take a look.

Let's have a show of hands by all who agree that the best way to get rid of an unwanted dog is to "haul him off"—that's right —get 'em up high so we can see 'em, looks like we have a lot of people who are believers in this easy way out.

Easy on who? The livestock owner who loses hogs, sheep and cattle to the strays? The people who are actually attacked by vicious curs or, worse yet, are infected with rabies or must submit to the rabies treatment because chances can't be taken with this dread disease?

The "thrown away" dogs aren't the only ones which present problems. Often they are abandoned by families moving from one place to another and can't or don't wish to take their pets along. In some parts of the state it is common practice to gather up all the curs and strays near the end of the deer season and drop them out in the woods hoping they will get "something moving". These dogs will certainly do all they can to survive even if they have to prey on domestic and game animals to do it. Game agents report extensive damage to deer herds that is caused by these abandoned animals. The worst time of the year is in the spring and summer when the doe is either carrying or nursing the fawn. Caring for the young and browsing an ample amount to provide both herself and the offspring with sufficient nutrition is a full time job. She can't spend half her time running from dogs and still be successful in rearing her young.

Georgia reports the loose dog is the most serious predator that the state has ever had. These animals constitute a more serious limiting factor on deer populations than wolves or panthers ever were. Their estimated total number of dogs is 800,000, of which 500,000 are owned, leaving 200,000 to 300,000 strays in the state. They report the estimated number of deer in Georgia is 100,000. Game officials of Arkansas have commented in a similar manner on the seriousness of their dog problem.

As has been pointed out above, the abandoned, feral (domestic gone wild) dogs are the culprits in most cases where loose animals are a problem. The use of hunting dogs is an old established tradition in Louisiana, particularly in the deep swamps and woods for which this state is noted. Any hunter who has a dog worth his salt is going to take good care of him and put a name and address on the collar so it can be identified and returned. This individual is willing to take full responsibility if his dog gets into trouble. If such a hound crosses the boundary of a Wildlife Management Area when the use of dogs is prohibited, the Area Supervisor will attempt to catch the dog and if successful will do everything he can to see that the owner is notified so he can get his dog back. This usually happens when the outside season around the Wildlife Management Area is open to dog hunting and the management area open to still hunting only at the same time. It is a recognized fact this is unavoidable in most instances, and since the majority of people who work as enforcement agents and game managers either own hunting dogs or have done so in the past, it can be seen why they are sympathetic to the owner.

Probably one of the most exasperating problems the enforcement people have today is with the unscrupulous hunter who takes advantage of the law that permits the training of dogs during closed season. Much too often deerstanders are placed along roads or power line rights-of-way and the pack turned loose. The only chance the agent has to make a case is to either see the hunter shoot at the deer or catch him with the animal in his possession. Otherwise the guy with the buckshot loaded shotgun or 30.06 rifle is wolf hunting. As is readily evident this practice works to the detriment of the true sportsman who wants to see the herds expand to the limit of the natural carrying capacity and is content to wait until the season opens to do his hunting.

In order to properly appreciate the need for effective protection for deer herds let's look back to 1950 when approximately 5,000 legal animals were taken. This was about the time the deer restocking program was getting under way. The several thousand whitetails that have been released since that time have done a reasonably good job of expanding and we now have open deer seasons in all or part of all the parishes except one. During the 1965-66 season over 25,000 legal deer were taken in this state. This five fold increase is certainly impressive but let's look a little further. Louisiana now has 16,038,000 acres in forest. These forests will support at least one deer to 60 acres, for a potential annual carrying capacity of 267,300 deer. Assuming an annual kill of $\frac{1}{3}$ of the total population, this will amount to 89,100 deer annually. This indicates we had better eliminate as many limiting factors as possible if we are to realize our full deer potential.

If you have a sick, crippled or diseased dog which you absolutely don't want around, then either destroy the animal in a painless, humane manner or take him to the local veterinarian and have him put to sleep. In case of doubt, call the nearest SPCA and ask their assistance. Often a home can be found for unwanted pets. This is certainly better than dropping him off on a lonely road and having him wander about the country in a state of misery, starvation and destruction. ✠

What Later...
...Mr Gator

Robert H. Chabreck and Ted O'Neil

OVER THE PAST two decades the Wildlife Departments of all southeastern states have made great efforts to place the various species under sound management. These efforts have been very rewarding in most instances. White-tailed deer have been established in huntable numbers throughout all states. Also, Mourning Doves enjoy a good population status with liberal seasons and bag limits.

However, the picture is not all rosy. Several species have gone downward during this period, in spite of efforts to build them up. The alligator is a classical example of this in Louisiana. Over the years the alligator has declined to the point where the animal is practically non-existent over its original range.

Historians report that during the 19th century alligators were abundant in all marshes, swamps, rivers, lakes and sloughs in Louisiana. It was not until the latter part of that century did a market develop for alligator skins, and in the beginning only skins over 8 feet long were acceptable. Yet, interest in hunting the reptiles was high and E. A. McIlhenny of Avery Island estimated that 3 million were harvested in Louisiana between 1880 and 1933. Tax records of the Louisiana Wild Life and Fisheries Commission show further that 314,404 alligator skins were sold in the state from 1939 to 1955.

The harvest from 1939 to 1955 averaged about 20,000 animals per year, which on today's market would be valued at $600,000 annually. Such an income today would provide incentive to landowners to improve the marshes and maintain the wetland habitat required by alligators.

The great beauty and high quality of alligator skins for wearing apparel has elevated these products to the position of status symbols, not only in the U. S. but also in other countries. The beauty of the North American alligator has been further enhanced by improved dressing techniques in recent years.

Aside from the market on alligator skins, the reptiles have other values that make them a valuable asset to Louisiana. The aesthetic value is probably far reaching and equal to the overall other values. Catching a glimpse of a large alligator sunning on a bayou bank on a spring day is a scene that no one will soon forget. In fact the monetary value of this animal as a tourist attraction to the state has been estimated at over $1,000,000.

In spite of the importance of the alligator no action was taken until 1960 to restrict the indiscriminate killing of the reptiles along the Louisiana Coast. At that time the State Legislature passed laws prohibiting the killing of alligators less than 5 feet long and gave to the Louisiana Wild Life and Fisheries Commission authority to establish seasons and specify areas and methods for taking the animals.

In 1963 the Commission closed the season on alligators and made it illegal to kill or molest alligators anywhere in the state. The only persons allowed to have alligators or alligator skins in their possession were licensed alligator breeders or skin buyers who could prove that the skins were from out-of-state.

The alligator population in the state declined about 90 per cent from the late 1940's to the late 1950's. If the Legislative action of 1960 to

Bob Chabreck and Ted Joanen weigh and mark a young gator to be released in a research area at the Rockefeller refuge.

restrict the killing of alligators and place them under responsible management had been taken 10 years earlier the task would have been much simpler. By 1960 not even a basic breeding population was present in many of the state's swamps and marsh areas.

After 1960 the Commission permitted only a 60-day spring season, with the 5-foot size limit in effect. This season was held with hopes that these restrictions would be adequate for rebuilding the population. Also, the industrial demand for alligator skins was very great and the Commission tried to provide enough alligators to keep the industry going, yet leave a surplus each year to gradually rebuild the population.

By 1963 it was obvious that the restricted season was not the answer, since during that time the alligator population showed no increase. Also, outlaws used the 60-day season to dispose of alligator skins taken illegally during the remainder of the year. Having no alternative the Commission closed the season and intensified enforcement activities.

The closed season limited the supply of alligator skins to the market, and with the increased demand, price increases followed. In fact the price increase was so great that many hunters and buyers continued operating, knowing that they were violating the law as well as harming the resource.

Most violators felt that the fines charged by certain courts were so small they could continue hunting, even at the risk of being arrested by game agents. Very often the violator could pay a fine with the proceeds from less than a day's work. Not until the courts raised the fines and gave jail sentences did the full effect of the enforcement effort begin to show.

In certain parishes the picture has changed and the alligator is making a strong comeback and within a few years may again be an important part of the local fauna. However, in other areas the scene is very gloomy. The heavy illegal kill continues, in spite of efforts by game agents. And with the illegal kill alligator populations decrease.

This large breeding alligator is being readied for transport to a marsh area where gators are scarce.

Where do we go from here? That's the big question now. We know very well how to rebuild alligator population, because we have seen it demonstrated so clearly in certain areas. We know that progress has been made in the past few years, but we must be persistent to make sure that it continues.

Additional legislation is badly needed to fill certain loop-holes in existing laws. It is essential that federal laws be passed or amended to prohibit the unauthorized transporting of alligators or alligator skins from state to state. Also, state laws are needed to strengthen the position of landowners managing marshes for alligators. The landowner should benefit from future alligator seasons through special alligator tagging systems or licenses.

There is considerable interest at present in alligator farming. However, sufficient evidence is not yet available to prove that the reptiles can be raised in pens on an economically sound basis. Nevertheless, experiments now underway by the Commission show favorable results. If suitable alligator farming practices can be perfected, then a supply of skins to meet the industrial demand can be produced by these means.

One intriguing thought that occurs regarding pen-reared alligators is of the great success of the mink rancher. Louisiana is a leading wild mink producing state and each year the catch ranges from 40,000 to 80,000 wild pelts on a total of 30 million acres. However, several of the larger ranchers can produce this many ranch mink alone on only a few hundred acres. While alligators may not be an exact parallel to mink, the idea remains and should be considered fully.

More information is also needed on the habits and basic requirements of alligators. Louisiana has lead the nation in alligator research over the past 10 years, yet much remains unknown. A continuation of this research work is essential with special emphasis in the future placed on determining habitat requirements and ecology of the reptiles. As the wetland habitat continues to give way to agriculture and industry, more intensive management of that remaining will determine what's next for the alligator.

Enforcement will be as important in the future as it has been in the past. Without adequate enforcement, laws and regulations are useless. Whenever the welfare of a resource is at hand, most people are honest enough to abide by laws set up to protect the resource. However, a few people are not and without adequate enforcement, by the courts as well as game agents, this small segment of violators will continue to operate. Then in reality all you will have is a private hunting club for the lawless element. Therefore, in deciding what's next for the alligator the importance of a rigid, well-coordinated enforcement program must be emphasized. ✢

The Wild Turkey in Louisiana

Cliff Williams

During 1967, Louisiana sportsmen will participate in the longest spring wild turkey season in 35 years. A look to the "future" shows more territory open for turkey hunting due to efforts of the Louisiana Wild Life and Fisheries Commission and residents of the State.

The wild turkey is considered as "big game" and interest in this bird is increasing. Louisiana hunters have enjoyed successful hunts in the past and the future should be as encouraging. Since the wild turkey shows great potential for increased game production within the State, it is only fitting to briefly discuss its past, present and future history.

To begin with, very little information exists pertaining to the wild turkey in Louisiana before 1900. From available records, this bird originally ranged in 41 of the state's 64 parishes in large numbers, but was absent from the prairie lands of the southwest, the South Mississippi Delta and the coastal marshes. It has been estimated that the wild turkey population in Louisiana once numbered one million birds, yet by the late 1940's this figure had decreased to approximately 1,500. Population numbers dropped in accordance with habitat loss over the years. Since the 1940's our state-wide population has increased by several thousand birds and several million acres of forest lands provide suitable but un-inhabited turkey range.

At present, the wild turkey occurs in huntable numbers within only four sections of the state as outlined in the accompanying map. They are: two areas within the Florida Parishes, the northeast Delta Parishes of Franklin, Madison and Tensas and the northern parishes of Morehouse and Union.

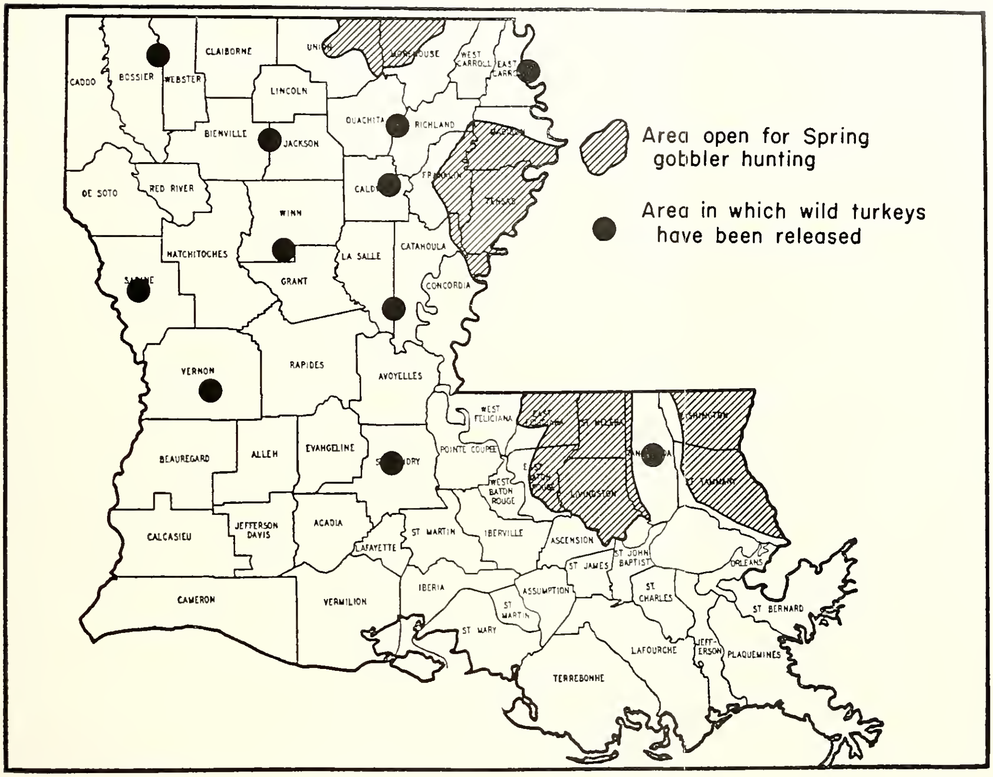
The 1967 wild turkey season has been set for April 1-23, 1967 inclusive. The bag limit is one gobbler per season and the wild gobbler can be taken by still hunting only. The use of dogs and baiting is specifically prohibited. The season is open only in those parts of the following described parishes. Parts of certain parishes are included within the open area, but only for the sake of establishing hunting territory boundaries.

1967 TURKEY SCHEDULE

AREA NO. A—Union and Morehouse Parishes. East of La. Hwy. 549 from Arkansas line to La. Hwy. 348 at Conway; North of La. Hwys. 348 and 33 from Conway to Marion; east of La. Hwys. 143 and 2 from Marion to Ouachita River; west of Ouachita River from La. Hwy. 2 to the intersection of Parish Road and Ouachita

A look to the future. Commission personnel from District II releasing wild turkey on the state owned Russell Sage Wildlife Management Area. These are the first birds to inhabit La Fourche Swamp in 25 years.

The conclusion of a successful hunt. Floyd Mangum of Shreveport with an 18 pound gobbler bagged during one of the past hunting seasons.



River (south of Papaw Lake); north of Parish Road and La. Hwy. 592 from Ouachita River to U. S. Hwy. 165, north of U. S. Hwy. 165 from La. Hwy. 592 to La. Hwy. 139; west of La. Hwy. 165 from Bonita to Arkansas line; Except the Union Parish Game Management Area. See Game Management Area Schedule for Georgia-Pacific Wildlife Management Area.

AREA NO. B—Madison, Franklin, Catahoula, Concordia and Tensas Parishes, South of U. S. Hwy. 80 from the Mississippi River to La. Hwy. 17. East of La. Hwys. 17 and 15 from Delhi to Winnsboro to Clayton; east and north of U. S. Hwy. 65 from Clayton to the Mississippi River.

AREA NO. C—East Feliciana, East Baton Rouge, Livingston, St. Helena, and Tangipahoa Parishes. East of Thompson Creek from the Mississippi line to La. Hwy. 10; north of La. Hwy. 10 from Thompson Creek to Clinton; east of La. Hwy. 67 from Clinton to the junction of U. S. Hwy. 190 at Baton Rouge; north of U. S. Hwy. 190 from La. Hwy. 67 to the Amite River; east of Amite River from U. S. Hwy. 190 to Lake Maurepas; north of Lake Maurepas from Amite River to U. S. Hwy. 51; and west of U.S. Hwy. 51 from Lake Maurepas to the Mississippi State Line.

AREA NO. D—Washington and St. Tammany Parishes. East of La. Hwy. 25 from the Mississippi State line to Covington; east and north of U. S. Hwy. 190 from Covington to the junction of U. S. Hwy. 90; and north of U. S. Hwy. 90 from the junction with U. S. Hwy. 190 to the Mississippi State Line.

The Louisiana Wild Life and Fisheries Commission initiated a wild turkey trapping and transplanting program in 1963 in order to expand existing wild turkey range and to reduce hunting pressure within those areas of the state which are presently opened to gobbler hunting. *Only* wild trapped birds are used for transplanting purposes. Louisiana has several million acres of suitable but uninhabited wild turkey range. With good management practices, huntable turkey populations can be re-established over much of the forested areas of the state.

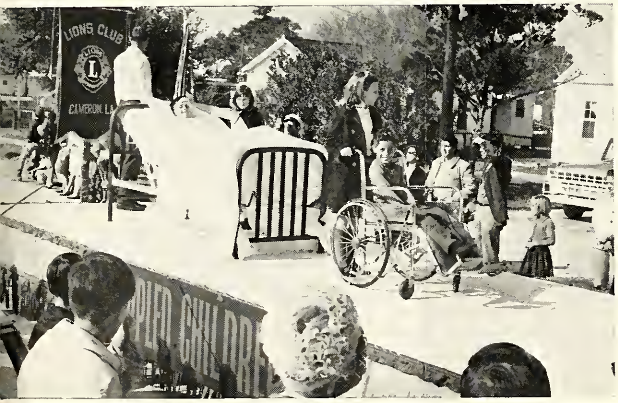
Approximately 300 birds have been transplanted within Louisiana since the program began. Many birds were trapped within the state using the cannon net trap and others were obtained from neighboring southeastern states. Louisiana has the potential for developing a good population of wild turkeys in many areas where they do not presently exist.

The same thing can be done for the turkey that was done for deer in the past 15-18 years. However, to be successful, this venture needs the support and cooperation of every citizen in the

(Continued on Page 24)

11th ANNU AND WIL FESTIV

Winners in the "Queen's" contest were, left to right, Kathleen Hebert "Miss Personality"; St. Mary Parish; Charlene LaBove, First Runner-up, Cameron; Linda Trappey, Queen, 1967, New Iberia; Susan Karnegy, Queen 1966, Cameron; is seen placing crown on new queen's head and Catherine Somme, St. Charles parish, was Second Runner-up.



Float of the Cameron Lions Club in the parade at the Fur and Wildlife Festival.

Dr. Leslie L. Glasgow (3rd man back row), director of the Louisiana Wild Life and Fisheries Commission is shown here with the contestants of the 4-H Fur judging contest and their sponsors.

The Eleventh Annual Fur and Wildlife Festival was held in Cameron on January 13-14. This is one of the more colorful and interesting festivals in our state since it promotes wildlife interests.

Festival activities started on Friday afternoon with trap shooting and State 4-H Fur Judging at Rockefeller Refuge and continued through Saturday afternoon with State Queen's Contest and Queen's Ball.

Muskrat and nutria skinning events drew the largest crowds and defending muskrat champion skinner, Fletcher Miller of Cameron, lived up to his reputation by retaining his championship. Miller skinned out five muskrats in one minute and five seconds to take first place. Robert Schwark of Cameron placed second and Charles Trahan of Cameron finished third.

In the nutria skinning contest Wade Vincent of Pecan Island was first, beating defending champion Robert Mhire of Grand Chenier who placed second. Third place went to William L. Doxey of Cameron.

Retriever dog trials were dominated by Ray Burleigh of Cameron with his dog "Prince" taking top honors. Cecil David of Klondike placed second with his dog and Ray Burleigh's dog again moved into place third.

The Fur and Wildlife Festival parade was the highlight of the day. Prize for the most beautiful float in the senior division went to the Cameron VFW Ladies Auxiliary. Second place went to the Cameron-Creole Knights of Columbus Council.

Original float honors in the senior division went to the Cameron Optimist Club for first place. Second place honors went to the Louisiana Menhaden float and third place to the Cameron Lions Club.

Junior Division floats were very colorful with first place honors for the most beautiful going to the Cameron 4-H Club. The South Cameron Beta Club was second and Johnson Bayou 4-H third. Most original honors went to Grand Chenier 4-H Club, first place; with Hackberry 4-H Club placing second and Oak Grove 4-H Club third.

Interest in the afternoon centered around the duck and goose calling contests. In the senior division goose calling contest, Miss Billie Dominque of Port Arthur, Texas, a former National Woman's duck calling champion placed first. Ernest Meaux of Sulphur was second and J. B. Jones, Cameron, third.

Little change was made in the senior duck calling contest with Clarence Dominque, father of Miss Dominque, placing first. Second place honors went to Ernest Meaux of Sulphur and J. B. Jones, Cameron, third.

Other events and winners listed in first through third place were as follows:

Junior Duck Calling—Martin Miller of Cameron, Kenneth Duhon of Grand Lake and Malcom Hebert also of Grand Lake.

Junior Goose Calling—Larry Theriot, Holly Beach; Jeffery Boudreaux, Creole; and Carlton Styron, Creole.

State 4-H Fur Judging took place at Rockefeller Refuge, Grand Chenier. Winners for this event will not be announced until March 1 after all pelts, catch and sale records are submitted.

Junior Trap Shooting—Barry Kelly of Cameron, Joe Clark of Cameron and Phillip Trosclair of Cameron.

Women's Trap Shooting—Norma Jean Blake, Cameron; Wilma Guthrie, Cameron and Margaret Duhon, Cameron.

Men's Trap Shooting—Eddie Conner, Jr., Cameron; Jim Hughes, Lake Charles; and Jim Young, Lake Charles.

Junior Muskrat Skinning—Wallace Ackman, Franklin; Wade Miller, Cameron and Martin Miller, Cameron.

Junior Nutria Skinning—Wallace Ackman, Franklin; Martin Miller, Cameron and Wade Miller, Cameron.

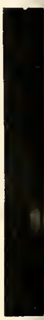
Trap Setting—Robert Mhire of Grand Chenier; Ernest Miller of Cameron; and Fletcher Miller of Cameron.

Essay Contest—Ted Baccigalopi of South Cameron High School and Michael McCall also of South Cameron High School. In this event there was no third place.

Miss Linda Trappey, 18, of Iberia Parish was crowned queen of the festival Saturday night. Linda is the daughter of Mr. and Mrs. W. J. Trappey of New Iberia. She was crowned by Susan Korregay, last year's queen.

Miss Cameron, Charlene LaBove of Cameron placed second and Miss Catherine Somme of Des Allemands in St. Charles Parish was third place winner.

The Louisiana Wild Life and Fisheries Commission had a large display, constructed by Commission Wildlife Instructors in the Cameron Library. The wildlife display portrayed the natural resources of the Cameron and Gulf Coast.



AL FUR DLIFE AL

Photos by Bob Dennie
Text by Joe Herring

Clarence Domingue, of Port Arthur, Texas, walked off with the honors in the Senior Duck Calling Contest. Ernest Meaux of Sulphur, La., and J. B. Jones, Cameron, right, was third.

ners of the Trap Setting Contest, were, left to right, Robert E. 're, Grand Chenier, first place in 57.1 seconds, Fletcher Miller, l place, Ernest Miller, second place, Cameron.

The animal skinning contest is always an attraction at the fur festival, seen are the winners in the muskrat skinning contest, left to right, Fletcher Miller, first place one minute 5.9 seconds. Robert Schwartz, second and Charles Trahan, third place. All are from Cameron.

illie Domingue, of Port Arthur, Texas, was nner of the Senior Goose Calling contest.

Hadley Fontenot, County Agent of Cameron Parish, is President of the Cameron Fur and Wildlife Festival and a moving figure in the annual event.

Chris Lasseigne, Lafourche Parish, one of the contestants in the 4-H Club Fur Judging contest, he is seen being con- gratulated by Dr. Leslie L. Glasgow, director of the Louisiana Wild Life and Fisheries Commission.

Miller, of Cameron, La., took lace in Duck Calling contest. th Duhon, of Grand Lake, was , and Malcolm Hebert, also nd Lake, was third. The latter oys are not in the picture.

Random pictures at the Cameron Fur and Wildlife festival during the contests.

Results of Pass-A-Loutre Waterfowl Season

LOUISIANA WATERFOWL hunters enjoyed record breaking success on the Pass-a-Loutre Waterfowl Management Area during the 1966-67 season. On 24 morning hunts, with sportsmen from throughout the state participating, 5,343 birds were bagged. Improved marsh conditions with an abundance of natural food had attracted ducks to the area and favorable weather provided better hunting conditions.

The Refuge Division of the Louisiana Wild Life and Fisheries Commission operated nine public camps on Pass-a-Loutre Public Shooting Area this past season. Three of the camps which were destroyed by Hurricane Betsy in September of 1965 were completely rebuilt and were in service for the 1966-67 waterfowl season. All were ready for the first group of hunters who arrived on November 18. Twelve hunts were conducted throughout the season, each hunt lasting two days plus an additional day for traveling. Shooting was allowed on four mornings each week; Tuesday - Wednesday and Saturday - Sunday. This prevented over-shooting the area and maintained huntable concentrations of ducks throughout the entire waterfowl season.

Interest in duck hunting at Pass-a-Loutre has steadily increased year after year, with 2,298 applications this season. Applications came from all parts of the state including Monroe, Shreveport and Alexandria, although the majority of the applications were from New Orleans, Baton Rouge, Covington and Hammond areas. Applications were also received from adjacent states, although first choice was given to resident hunters. A total of 864 permits were issued for the public camps with 715 hunters making the trip.

The total kill of waterfowl by hunters participating in the public camp hunting program for the 1966-67 waterfowl season is presented in Table 1. Gadwall ranked first in the bag with 2,556 birds taken in twelve two day hunts. This made up 48 per cent of the total ducks killed. Baldpate was second with 553 birds taken and pintail was third with 369 birds tallied. Lesser scaup ranked fourth with 310. The scaup did not move inland until mid-December and did not show up in the bag checks until hunt No. 8, when they appeared not only as bonus ducks but in some cases made up the entire bag limit.

Two hunters returning from a hunt at Pass-a-Loutre.

The average daily kill per hunter effort (3.3) was the highest recorded for the past three years, 2.36 for 1965-66 and 2.16 for 1964-65 waterfowl season. This could be attributed to several factors. First the season opened earlier than in past years and hunters could take advantage of the high tides caused by the prevailing southern winds. This made hunting easier as all parts of the marshes were easily accessible with this high

TOTAL KILL BY SPECIES FOR PASS-A-LOUTRE PUBLIC CAMP

1966-1967 WATERFOWL SEASON

	Hunt Number												
Species	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*Total*
Mallard	17	9	18	7	17	5	27	9	3	1	9	4	126
Gadwall	253	227	309	111	215	349	224	144	198	194	166	196	2,556
Baldpate	77	48	58	48	70	22	51	39	68	30	33	9	553
Green-winged Teal	16	5	10	20	20	1	22	11	23	4	15	23	170
Blue-winged Teal	22	11	20	8	22	5	8	9	3	10	8	6	132
Shoveler	23	17	36	8	22	20	22	15	33	34	15	11	256
Pintail	42	49	40	22	22	12	30	54	38	23	34	3	369
Mottled	24	15	2	2	22	3	11	8	4	1	2	4	98
Redhead	2	2	1	0	0	0	1	4	2	16	0	0	28
Canvasback	0	4	4	2	0	3	8	1	6	4	0	4	36
Lesser Scaup	1	1	2	4	9	4	4	29	57	60	58	81	310
Ringneck	13	11	3	9	3	0	12	4	1	13	6	3	78
Ruddy	0	0	0	0	0	0	0	0	0	0	0	2	2
Merganser	1	0	3	3	4	0	6	1	1	1	4	2	26
Total Ducks	493	399	496	234	426	424	426	328	437	381	350	346	4,740
Total Geese													76
Total Coots													527
Grand Total													5,343

A dense stand of freshwater three square grass being examined by Director Glasgow during the summer of 1966. Stands, such as these, attracted thousands of waterfowl to Pass-a-Loutre.

tide. Also, the hunters, who as a general rule are not familiar with the area, were able to select better hunting blinds.

Information on wind direction and velocity was obtained from the U. S. Weather Bureau Office in Boothville, Louisiana for the entire 1966-67 waterfowl season. This information indicates the prevailing winds on the Lower Delta were from a southerly direction and occasionally shifting to north and northwest. As long as these winds blew from a southerly direction the tides remained well above normal. North and northwesterly winds were very often accompanied by rain as this cold front moved through the area. As long as this frontal system was present the weather remained calm and clear, although heavy cloud cover was sometimes associated with this type of system. This type of weather conditions was always accompanied by tides well below normal.

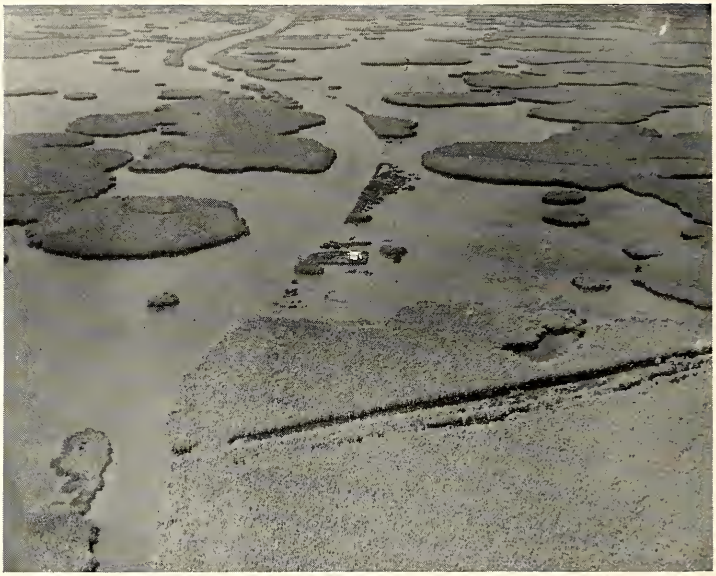
Hunter success could be directly related to the weather conditions existing at the time on the lower delta, as this area is severely affected by tidal flow. Hunter success was highest with south to southeasterly winds. Also, on the first day of a weather change, to a northerly direction, hunter success was high. Each day this northly wind persisted, tides were below normal and hunter success decreased.

Fog is typical on the lower delta in the early morning hours and later afternoon, but would dissipate shortly after day light. Although on one hunt this condition lasted two days and greatly reduced the waterfowl kill and hampered boat travel.

A second reason for the heavy waterfowl kill was that the marshes of the lower delta were in excellent condition as a result of the 1965 hurricane. Although this hurricane caused severe damage to homes, buildings and livestock, it actually rejuvenated plant growth on Pass-a-Loutre. As the hurricane force winds swept across ponds and open bays on the delta it took with it most of the organic debris which had built up for several years on the pond bottoms. This organic debris is a semi-liquid ooze which forms from an annual buildup of decaying vegetation. The elimination of the organic buildup or semi-liquid bottoms which are not firm enough to support plant growth provided the marshes with optimum growing conditions. Tremendous stands of delta duck potato, freshwater three square, and parrot feather were produced this past spring. As a result of this several thousand waterfowl wintered on Pass-a-Loutre this year.

On the open portion of Pass-a-Loutre hunters enjoyed similar success to the camp hunters. A

Technician tabulating numbers and kinds of ducks killed at Pass-a-Loutre.



Open bays and shallow ponds provide ideal conditions for production of desirable duck food plants at Pass-a-Loutre.

total of 878 free permits were issued during the 1966-67 waterfowl season. This compares favorably with the number of permits issued during the 1964-65 season, however, it is approximately 300 more than were issued during the 1965-66 season when many hunters who normally hunted at Pass-a-Loutre were occupied with making repairs to their homes and property from the damages caused by Hurricane Betsy.

Portions of Pass-a-Loutre open for free hunting consists of the more remote sections along Pass-a-Loutre, Southeast and South passes, where dense stand of delta duck potato and freshwater three square were produced. These areas attracted large concentrations of ducks, as well as Blue and Snow geese and provides some of the finest goose shooting in Southeast Louisiana.

In final analysis Pass-a-Loutre hunters experienced one of the finest duck seasons in many years. Weather conditions and food for ducks were ideal for the most part and shooting was excellent. ✢

A group of successful hunters displaying their first day's kill.

WILDLIFE-O-GRAM

FROG SEASON CLOSED IN APRIL AND MAY

Frog hunters are reminded that the season for taking frogs in Louisiana is closed during the months of April and May. Aside from those two months frogs may be taken with the aid of a jacklight or any other visible light and by means of mechanical devices known as frog catches, provided those do not puncture the skin or redden the meat of the frog.

The taking of frogs by means of spears or other devices which puncture the skin or redden the meat is strictly prohibited. It is also unlawful for any person to carry or have in his possession any shotgun, rifle or firearm while taking or hunting frogs during the night time.

Limits in size on lagoon frogs are 3½ inches; on bullfrogs 4½ inches, not counting the legs. Measurements are made across the back from the tip of the nose to the tail.

BACK TO SCHOOL FOR WILDLIFE AGENTS

Wildlife Agents George Ray Furlow and Huey Pierce Sanders attended and graduated from a one-week Fingerprint Classification School which was conducted at Louisiana State University from January 9 through 13. The instructor for the school was Larry M. Shearer of the FBI; Coordinator is Julian A. Martin.

* * * *

Wildlife Agents who have graduated from LSU Law Enforcement Basic Training Academy include Buck Spillers, William H. Tarpley, Durwood McGee, Willie P. Barfield, Orval Poole, Joseph Thibodeaux, Russell J. Landry, John D. Istre, Charles W. Cockerham, Phillip Anderson, Grady Floyd, Ray Harrison, Rugh E. Hay and S. J. Lyons.

* * * *

A certificate of appreciation was recently awarded to Agent James E. "Red" Hamilton of Union Parish by the Farmerville Junior Chamber of Commerce. In making the presentation the speaker pointed out: "For doing an outstanding job of enforcing the game and fish laws of our state and also being one of our outstanding citizens." The Jaycees also said they thought all the wildlife agents in Union Parish were doing an outstanding job.

EDITOR'S BOOK REVIEWS

"The Alien Animals: The Story of Imported Wildlife"

by George Laycock

240 pages. Illustrated with black and white photographs. Published by Doubleday and Company, Inc., 277 Park Avenue, New York, New York 10017; 1966. Price $4.95

Man, the supreme meddler, author Laycock shows, never has been content to leave well enough alone. Show him paradise and he'll set about improving it.

Laycock sounds a plea to stop the transplanting of exotic animals. He asks for an international board of qualified scientists who would pass on proposals for the release of more animals.

IT'S MARSH MANAGEMENT TIME

R. K. Yancey

LOUISIANA is richly endowed with over four million acres of marsh that spreads out along the Gulf coast between Sabine Lake and Pearl River. This vast complex of lakes, deltas, ponds, bays, bayous, cheniers, and wetlands is one of the most prolific producers of fish and game on earth. For decades the tremendous productiveness of these wetlands and estuaries has been taken for granted. Now, however, many of those who have shared in the bountiful harvest of wildlife in recent years are witnessing a deterioration of marshes in many sections and are interested in taking corrective action.

Excellent marsh management programs have been carried out on several large tracts of privately owned lands and also on the 500,000 acres of State and Federal wildlife refuges but this has barely scratched the surface. A much better job must be done if Louisiana is to retain its position as the top wintering area for migatory waterfowl on the continent, as the number one producer of salt water commercial fishery products among the 50 states, as the leading fur producer in North America and as a sportsmans paradise for both bay and gulf sport fishing.

On an overall basis the treatment dealt out to the Louisiana marshes in the past can scarcely be pointed to with pride. Deterioration in quality of thousands of acres of productive marshes has and is taking place and is in need of reversal. Drainage has taken its toll, pollution has had its adverse effects, but the greatest changes in the coastal environment has resulted from the riddling of the marsh with thousands upon thousands of canals and ditches that have been cut for access purposes.

Thousands of man-made canals constructed along the Louisiana coast have greatly increased salt water intrusion into inland marshes resulting in radical changes in vegetative types and in the end wildlife usage.

This network of channels has permitted salt water intrusion into inland fresh marshes during high tides and rapid loss of fresh water during extended periods of low tides in the Gulf of Mexico. Many thousands of acres of marshes that were previously fresh and poorly drained are now brackish and thousands of acres of marshes that were previously brackish are now salt marshes. The radical changes in water cycles have caused drastic changes in vegetative types in many areas. Virtually all natural water conditions along the entire Louisiana Coast have been disrupted as a result of ditching operations that have been carried out with little or no regard for wildlife or vegetative types. In addition direct losses of marsh acreage from dredging followed by erosion

Pintails, mallards, and other puddle ducks heavily utilize flooded millet marshes. This particular marsh in Cameron Parish was formerly occupied by sawgrass and after 10 years of millet production is now being taken over by wiregrass, a plant that does not produce food for ducks. This condition can be corrected by proper marsh management.

has been a serious problem. Improperly placed levees have also shut off siltation processes that formerly compensated for losses of marsh occurring from natural erosion and subsidence.

Most desirable marsh plant communities will thrive and grow only under a very restricted set of environmental conditions. When this delicate balance is upset rapid changes in vegetation, usually undesirable in the long run, will almost certainly take place. Salinities, tidal action, water levels, and turbidity are but a few of the factors, affecting plant life and in the end wildlife usage.

One prime example of this has transpired in the coastal marshes of southwest Louisiana. Sawgrass *(Cladium jamaicense)* formerly occupied tens of thousands of acres of marsh in Cameron and Vermilion Parishes but disappeared almost entirely in the 1940's and early 1950's. When this fresh marsh climax species died away the vast stretches of barren marshes began to produce dense stands of wild millet *(Echinochloa walteri)* and sprangletop *(Leptochloa fascicularis)* creating a near perfect wintering ground for hordes of pintails, mallards, teal, and other puddle ducks. Now, however, wiregrass *(Spartina patens)* has invaded the millet producing marshes and is suppressing thousands of acres of millet. Wiregrass is not a duck food plant and its control is extremely difficult. Sawgrass could not survive under the changing water conditions and wild millet will be unable to withstand encroachment by wiregrass unless management procedures are initiated.

The changing conditions have been noted with alarm in many quarters along the coast and in 1966 hundreds of inquiries were received in the office of the Wild Life and Fisheries Commission concerning remedial action that could be taken. This growing interest is most encouraging and may eventually result in the restoration of many acres of marshes even if only on a piecemeal basis.

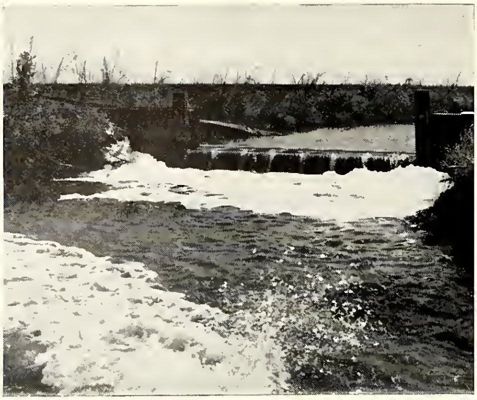
Waterfowl hunters exhibited particular interest in taking action and it is within this category of marsh management that much can be accomplished if proper steps are undertaken. The Louisiana marsh customarily winters 4 to 5 million ducks and serves as a temporary rest area for hundreds of thousands that winter in Central and South America. Accommodating this huge concentration of waterfowl requires the annual production of thousands of tons of plant and animal food in the marsh. In addition it must be readily available for duck usage for a nine-month period from mid-August through mid-May. Only through proper management can such a tremendous goal be realized.

Those considering marsh management projects for waterfowl during 1967 should begin *now* if the objective is to produce a stand of desirable duck food plants for the forthcoming winter. Unfortunately there is no set prescription for easily managing all marshes. A few general rules do apply, however, that merit consideration. First of all marsh management is a complex science and should be planned by an experienced biologist, ecologist, or person who has a thorough working knowledge of the factors affecting plant communities in a wetland habitat. Secondly, marsh management is usually quite expensive. Marsh preservation is fairly inexpensive as a general rule but this seldom holds true for habitat restoration. Thirdly, water control is the key to marsh management in virtually all cases. Partial or complete water control is considered to be possible in over fifty percent of Louisiana's coastal regions.

Gaining water control and exercising it throughout the year generally requires substantial financial outlays. Last but certainly not least, it is a waste of money to indiscriminately

On the Rockefeller Wildlife Refuge this impoundment produced a bumper crop of widgeon grass which in turn attracted large numbers of gadwall, baldpate, and pintail.

Successful marsh management will provide a winter home for many migrant waterfowl as well as benefits in the form of hunting, one of Louisiana's great outdoor sports.



Low sill dams such as this one on the Marsh Island Wildlife Refuge will increase widgeon grass production in the brackish tidewater marshes of Louisiana resulting in greater usage by ducks.

sow plant parts or seed of the mail order variety in a natural marsh where water conditions are not controllable. Thousands of dollars have been thrown away in Louisiana in recent years on this type of venture. Such funds could have produced favorable results if used for the purpose of creating conditions that would induce natural growths of food plants native to the coastal region through water control.

Two basic water control procedures have been successfully developed in Louisiana's marshes in recent years. Hundreds of Wakefield weirs or low sill dams have been installed on both private and public land in the brackish and salt marshes. Secondly, a number of impoundments have been created in the fresh and brackish marshes. Such impoundments involve the construction of a combination of low lying ring levees around a marsh with one or more strategically located water control devices installed in the levee. A wide variety of water control devices are now used in impoundment construction. These include pumps, stop log structures, overflow outlets, lift and flap gates.

Weirs are usually used in brackish or salt marshes for the purpose of producing stands of widgeon grass. The low sill dams partially stabilize water levels and prevent tidewater ponds from going dry during periods of low tide in the Gulf of Mexico. The structures greatly reduce tidal action and water level fluctuation. Also turbidity is greatly reduced thereby allowing light penetration through the water, a factor essential for aquatic plant production.

Weirs should be designed to hold water in the streams and ponds behind the structure but not over the marsh. Sill elevations should be installed AT LEAST six inches below marsh level to allow inflows of water during high tide and drainage of surplus water during low tide. Otherwise water action will simply cut a new channel around the structure within a matter of months. It should be remembered that stream bank elevations are usually higher than average marsh levels and that the top of the structure should be at least six inches below marsh level. Establishing a sill elevation can best be accomplished by shooting a level across the marsh to be affected by the structure. Heavy equipment is usually necessary for proper weir construction. Sheet piling of steel or creosote timbers should be used and a general rule of thumb is to drive the piling at least 2 feet into the ground for every foot of water depth. The ends of the structure should be covered with shell to prevent damage from marsh fires.

Ponds productive of widgeon grass are usually highly attractive to a wide variety of ducks. This is a high quality food plant and wherever it is produced in quantity duck usage can be expected to increase substantially. It will grow only in brackish water. Fairly clear water is essential and greater production can be obtained if excessive fluctuations of water levels are controlled.

Impoundment construction is a major operation and engineering assistance is usually called for. Soil conditions must be adequate to support a levee and suitable fill material must be available. Properly installed water control structures are a must if the objectives of impoundment management are to be achieved. A means of completely dewatering or completely re-flooding an impoundment within 3 or 4 weeks would be an invaluable feature of any impoundment plan.

Impoundments have been very successfully managed in the fresh marshes for millet and sprangletop *(Leptochloa fascicularis)* production, and in the brackish marshes for widgeon grass and dwarf spikerush *(Eleocharis parvula)*. To successfully produce millet or sprangletop the impoundment must be drained in the spring or early summer in order that the seed may germinate. After the young plants have started to grow, some moisture should be provided to allow maximum production. Re-flooding the marsh in the fall with 2 to 4 inches of water will then make the food supply available for use by ducks.

Impoundments can also be utilized for widgeon grass production in brackish marsh areas. Even here, however, de-watering of impoundments is sometimes necessary if maximum widgeon grass production is to be realized on a year to year basis. With proper management of water levels coverage by wiregrass can be controlled. In large impoundments the presence of some wiregrass is desirable since it reduces wind and wave action and turbidity.

This type of impoundment will usually yield favorable results in attracting large numbers of gadwall, baldpate, shovellers, pintails and teal.

In addition to improving duck hunting, proper marsh management will greatly benefit wintering waterfowl that need the habitat as well as a wide variety of other types of marsh wildlife. The number of ducks to be found on the continent is largely controlled by the quality, quantity, and condition of the entire habitat. The more acreage that can be preserved and developed the more our chances will be of guaranteeing the future of large numbers of ducks on the North American continent. ✢

GMA Deer Harvest Count Released

THE Louisiana Wild Life and Fisheries Commission has revealed that a total of 2,069 deer were taken from its game management areas during the 1966 season and that those areas collectively provided 36,520 hunter efforts.

This season's bag was greatest in the West Bay GMA where 6,922 hunter efforts during a five day period resulted in 406 deer being taken. Check station figures revealed that the one-day antlerless deer and four-day bucks only season showed 192 bucks and 214 antlerless deer.

The second largest bag was made in the Georgia-Pacific GMA where 4,231 hunter efforts produced a total bag of 329 deer. The number of bucks taken by hunters was 189, compared to a total of 140 antlerless deer.

Tying for third place in the number of deer taken were Catahoula GMA and the Fort Polk GMA. Both tallied 234 deer. The Fort Polk hunt was limited to three days, against five for Catahoula.

There were 5,208 hunter efforts in Catahoula and the ratio was 103 bucks to 131 antlerless deer. On Fort Polk, there were 3,487 hunter efforts and the ratio was 96 bucks to 138 antlerless deer.

Alexander State Forest provided 1,439 hunter efforts and resulted in 41 bucks being taken, along with 36 antlerless deer, for a total of 77.

Caldwell GMA was a bucks-only season and there were 1,294 hunter efforts, producing 59 deer.

In Evangeline GMA, a total of 47 deer were taken during 1,483 hunter efforts with the ratio being 22 bucks and 25 anterless deer.

Jackson-Bienville GMA attracted 3,430 hunter efforts and resulted in 67 bucks and 104 antlerless deer taken for a total of 171 deer.

There were 4,861 hunter efforts on Red Dirt GMA, he said, resulting in a total bag of 297 deer taken, the ratio being 132 bucks and 165 antlerless deer.

The Russell Sage GMA attracted 1,240 hunter efforts, netting 91 deer, with a ratio breakdown of 43 bucks to 48 antlerless deer.

Sabine GMA had a total of 540 hunter efforts which bagged 17 deer. The breakdown was 11 bucks and 6 antlerless deer.

In Saline GMA, it was a bucks-only hunting season. There were 250 hunter efforts, netting 6 deer.

On Thistlethwaite, hunters made 522 efforts, bagging 13 deer. The ratio was 8 bucks to 5 antlerless deer.

Union GMA attracted 1,191 hunter efforts, resulting in a total bag of 71 deer. The breakdown was 40 bucks to 31 antlerless deer.

The Zemurray Park GMA, by permit drawn at public lottery following written requests by hunters; a total of 422 hunter efforts produced 17 deer. The ratio was 8 bucks to 9 antlerless deer.

In the total bag from commission management areas the ratio was 1,017 bucks to 1,052 antlerless deer, or practically half and half.

On fully stocked ranges under sound management, both sexes should be taken in equal numbers. This yields a maximum continuous sustained harvest. If this practice is not followed, the deer herd soon increases above the carrying capacity, the range deteriorates and the number of deer decreases. On a long time basis this results in a harvest of fewer deer from the area.

In comparing figures for the same areas last year, it was found that most of the GMA's yield was slightly higher than last year; however, the 1965 total of 3,341 was much greater than the 1966 total of 2,069. This is due to the loss of Chicago Mill GMA on August 1 of this year. There were 1,617 deer taken there last year. This points up sharply the need for land acquisition whenever suitable land and funds are available. ✢

Calendar of Events

Louisiana Wildlife Federation
Convention
Alexandria, La., March 31-April 1-2
Bentley Hotel

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Louisiana Outdoor Writers
Association
Annual Meeting, Alexandria, La.
April 1
Bentley Hotel

* * *

Jean Lafitte Open Skeet Shoot
Lake Charles, La., April 1-2

* * *

Spring Fiesta Open Skeet Shoot
New Orleans, La., April 21-23
Sponsored by the South Louisiana Gun Club
Ranges Located Near Bridge City

* * *

Louisiana State Championships Skeet Shoot
Bogalusa, La., July 14-16

* * *

Grand Isle Tarpon Rodeo
July 20, 21 and 22

* * *

Empire Southwest Pass Tarpon Rodeo
August 17, 18 and 19

* * *

Please send in the name, date and location of any event of interest to hunters, fishermen, campers, boaters and other outdoor enthusiasts.

THIS IS CATAHOULA LAKE

Dewey W. Wills

Because of its size, topography, drastic seasonal water fluctuations, monotypic plant zones, and general uniformness for the past several thousand years, Catahoula Lake is unique among all lakes in Louisiana and probably in the world.

As a waterfowl wintering area this lake is of national significance. It is the key to waterfowl abundance and hunting success in Central Louisiana. It undoubtedly has been a major waterfowl wintering area for many centuries, for the abundance of waterfowl bones in Indian midden heaps indicates that it was a waterfowl concentration point before white men explored the region. Also, older residents of the area state that Catahoula Lake was an important source of waterfowl during the market hunting era.

Catahoula Lake plays an important role in the agricultural economy of the surrounding parishes. The luxuriant growth of herbaceous vegetation on the dewatered lake bed provides grazing and forage for large numbers of cattle and hogs. From 1958 to 1966 the hydrological cycle on Catahoula Lake permitted three to four months grazing by cattle and an average of four to five months utilization by hogs each year. In addition to providing forage and grazing for livestock, the sedges and grasses are cut and baled for hay. During dry years many thousand bales of hay are harvested from the lake bed.

Catahoula Lake is located in Central Louisiana about twenty miles northeast of Alexandria. This important wildlife area is situated on the western edge of the Mississippi River alluvium in the complex Red River backwater area. It is a large, shallow, poorly drained sump area that is subject to drastic seasonal water fluctuations. It is approximately fourteen miles long, three miles wide and contains about 30,000 acres. From the tree line to the lowest area in the lake bed, there is a drop in elevation of about three feet. The lake is bounded on the north by land that rises abruptly to a height of twenty to thirty feet above the high water stage and on the south by low land that is subject to annual overflow.

Catahoula Lake has a watershed of 2,672 square miles that extends generally northwestward from the lake to Ruston and the vicinity of Arcadia, Louisiana. This is an airline distance of some 80 miles with an average width of approximately 33 miles. Little River drains an area of 2,555 square miles before entering the lake.

Catahoula Lake is fed by Little River and numerous smaller streams from the north and west. At high water, drainage is to the east and south through Old River, French Fork of Little River, and several small bayous. At low water, the lake drains only through French Fork of Little River. The lake received "overflow" or "backwater" from Red, Black-Ouachita, and Mississippi Rivers. The water level in the lake depends on the seasonal stages of these rivers. Water gradually rises in these river systems and enters the lake by backing up through the normal drainage channels. Continued rises inundate the lowlands to the south of Catahoula Lake and permit backwater to enter the lake at other points.

Waterfowl concentrations on Catahoula Lake

High water normally prevails from late winter to early summer. Time of flooding and depth of water vary from year to year, but generally follow a distinct pattern. A gradual rise in the water level usually begins in November or December, increases sharply in January, remains at a high level through June and then recedes in July. The lake drains to a low water stage about the first of August, exposing approximately 15,000 acres of mud flats. At that time, about 5,000 acres are covered by water normally ranging in depth from one to twelve inches.

The lake bed is generally flooded from December through July. The water level fluctuates a great deal during this period and at its peak reaches a depth of fifteen to twenty-five feet. The winter rise and the summer drop are normally gradual. Because of the shallowness of the water and the extremely small clay particles of the bottom, wave action maintains a turbid condition. Few plants are adapted to such drastic water fluctuation, to such a long period of flooding and to such high turbidity; therefore, the number of species growing on the lake is limited. Because of the small number of species, interspecific competition is reduced. As a result, the lake is characterized by large acreages of rather uniform plant types.

Plant zonation, which is pronounced on the lake, is correlated with the lake bed contour and the length of time of flooding which controls the length of the growing period.

Woody plants that withstand flooding, primarily water elm *(Planera aquatica)* and swamp privet *(Forestiera acuminata)*, form dense stands on the perimeter of the lake. There is also some scattered cypress *(Taxodium distichum)*, water locust *(Gleditsia aquatica)* and buttonbush *(Cephalanthus occidentalis)* in this zone.

The outer contour of the lake is higher, firmer, and dewatered first; therefore, it has the longest growing season. The first herbaceous zone is exposed approximately five months each year, and is dominated by chufa *(Cyperus esculentus)*, the major herbaceous plant growing on Catahoula Lake. It is the chief understory vegetation growing beneath the water elm-swamp privet zone that comprises approximately 10,000 acres. On the open lake bed it is the major plant on approximately 6,000 acres and shares another 4,000 acres with sprangletop *(Leptochloa filiformis)*. This zone also contains some spikerush *(Eleocharis sp.)*, highland pursley *(Ammannia cocciena)*, heliotrope *(Heliotropium sp.)* and cockleburr *(Xanthium sp.)*. When this zone is dewatered early, the broadleafed plants just mentioned not only spread and occupy a larger area, but they also are much denser. However, chufa is the dominant plant in this zone.

The production of chufa on Catahoula Lake is dependent upon the annual water fluctuation. After the water recedes from the lake bed, thousands of acres of chufa are produced. The tubers produced by the root system of this plant are a favorite food of hogs as well as waterfowl. The rooting activity of hogs in search of tubers completely overturns the top layers of soil in the chufa producing areas. This activity probably makes some tubers more available to waterfowl by exposing them on the surface and by loosening the soil so that ducks can puddle in it easily.

Extensive hog rootings on Catahoula Lake. Such areas as shown in this photograph are flooded by winter rains and thousands of ducks feed on the chufa tubers that have been turned to the surface by hogs.

Cattle grazing herbaceous vegetation on Catahoula Lake. These same flats are heavily utilized by waterfowl after being flooded by winter rains

The next concentric zone occupies approximately 4,000 acres and is dominated by a mixture of sprangletop and chufa and is exposed approximately three to four months annually. The next zone is composed of pure sprangletop and covers approximately 2,500 acres. It is followed by a sprangletop-teal grass *(Eragrostis hypnoides)* zone of 500 acres. These two zones are exposed approximately two to three months each year. Approximately 1,000 acres of sprangletop-millet *(Echinochloa sp.)* is found next on an area that remains moist through the summer. Therefore, sprangletop occupies 2,500 acres of the lake bed and shares another 6,500 acres with other plants.

Millet does not exhibit the same degree of concentric zonation. Although scattered thinly over much of the lake, pure, dense, tall stands are found only on the more marshy, seepy areas. These stands occupy approximately 1,000 acres of the lake bed. Other millet stands occur in "pockets" over the lake bed. Millet is grazed more extensively on the firmer soils than in the pure-dense stands that occur in the oozy sites. On the firmer sites, millet may be grazed to ground level; however, the extremely short stems, one to two inches, lying flat on the ground still produce numerous seeds. Millet is probably the second most important waterfowl food plant growing on Catahoula Lake.

The lowest elevation at which plant growth occurs is covered by extensive stands of bull tongue (**Sagittaria sp.**), mud plantain (**Heterantheria limosa**), dwarf spikerush (**Eleocharis parvula**), and water hyssop (**Bacopa rotundifolia**). This area is flooded by open shallow water and comprises approximately 5,000 acres. These plants can evidently withstand a rather high degree of salinity as considerable amounts of salt water empty into the lake each day; salt water discharges are currently being sharply reduced. In the open shallow water of the lake where there is an increase in salinity, there is an apparent decrease in turbidity. This probably affects plant growth. Also, in certain areas of the open water mullet (**Mugil sp.**), buffalo (**Ictiobus sp.**), and garfish (**Lepisosteus** sp.) create a turbid condition. Turbidity of the water probably depresses plant growth in this area by excluding light from the plants.

As mentioned previously, Catahoula Lake provides a wintering area for large concentrations of waterfowl. Catahoula Lake may winter between 150 thousand and 450 thousand waterfowl annually. It provides the most valuable waterfowl habitat in Central Louisiana. Ducks found in greatest abundance are pintail, mallards, teal, gadwall, and baldpate. Those present in lesser numbers are ringneck, scaup, ruddy, shoveller, canvasback and wood ducks. Catahoula Lake also winters a few geese and several thousand coots. Waterfowl species and abundance on the lake are influenced by water levels and migrational movements. They are most abundant in the fall when the water is shallow, ranging in depth from four to eight inches. Under present conditions, the water cycle is highly favorable to the production of two excellent duck foods, chufa and millet.

Between five and six hundred permanent duck blinds are maintained on the lake. In addition, many people hunt the brushy edges without erecting a blind. It is estimated that seven thousand hunters use the area annually.

The thousands of acres of sedges and grasses that are produced on the lake bed provide grazing for many cattle and hogs. Cattle utilization occurs over a three to four month period during summer and fall. In addition to providing grazing and forage for livestock, many acres of sedges and grasses are cut and baled for hay.

Four species of plants are of major significance in furnishing forage for livestock on Catahoula Lake. Sprangletop appeared to be the most important forage species. Teal grass and wild millet were second and third in importance.

Although chufa ranked next to sprangletop in utilization, it is the writer's observation that it is not only used less than sprangletop, but also less than teal grass and wild millet. Cattle utilization is very small while hogs are the chief benefactor from this species. It would be impossible to designate the forage value of this plant to hogs since the top of the plant is generally wasted by hogs in their consumption of the basal parts of the plants and the tubers.

Catahoula Lake furnishes feed in the form of chufa tubers for hogs, as well as waterfowl. The production of chufa on Catahoula Lake is dependent upon the draw-down of the lake to a dry condition each year. Therefore, any permanent pooling of water on the lake bed will destroy the value of Catahoula Lake as a feeding ground for thousands of hogs and virtually destroy the lake as a wintering waterfowl area.

Catahoula Lake provides excellent temporary habitat for sport and commercial fish by increasing available nutrients, establishing large nursery areas, and by initiating a favorable food chain. At high water stages many residents of the area use the Catahoula Lake complex for commercial fishing to supplement their annual income. Annually, sport fishermen from all parts of the state take advantage of the high quality fishing found near the channel entrances and exits of the lake and in the connecting bayous.

Catahoula Lake has received heavy annual doses of lead pellets from intensive gunning pressure that dates back to the days of the muzzle loader. This heavy gunning pressure has resulted in the deposition of tons of lead shot on the lake bottom which has caused periodic outbreaks of lead poisoning in waterfowl. Older hunters in the area report that ducks have frequently died from some malady, believed to be lead poisoning.

Lead poisoning is known to occur in other places in Louisiana, but it is believed to be most serious on Catahoula Lake. The lake produces huge quantities of choice duck foods and is normally very shallow in the fall, consequently, it provides excellent habitat for large concentrations of waterfowl. The large numbers of waterfowl attract many hunters annually; consequently, much lead has been deposited on the bottom. These huge concentrations of ducks feeding in shallow water where large quantities of shot are present set the stage for periodic outbreaks of lead poisoning.

Lead poisoning outbreaks on the lake usually do not occur, or are seldom noticed, prior to the hunting season. The early fall flights of ducks consist mainly of pintail, teal, gadwall, shoveller and widgeon. Mallards arrive later in the season. The ducks that arrive early are not as persistent puddlers as are the mallards. When the early flights arrive water in the lake is confined to the shallow, permanently flooded zone that has a soft bottom. New shot has not yet been deposited and shot from previous hunting seasons has probably sunk below the reach of ducks. Since the area occupied by ducks at this time does not produce tuberous plants, they probably do not puddle extensively on the bottom. Because of these reasons, pre-hunting season lead-sickness does not normally occur or affects only a few ducks.

Ideal water depths for waterfowl over chufa beds. The open water is over hog rootings.

During the hunting season the water level of the lake may begin to rise and may flood part or all of the chufa-producing area. Since soils in the chufa-producing area are rather compact, new shot deposited during the hunting season probably remains available to ducks for some time and shot from previous hunting seasons may not have sunk below the reach of ducks. The number of mallards arriving on the lake increases and many of the other species have been present for some time. Ducks may have picked up shot on their southward migration. These factors favor a build-up of lead shot in ducks. Consequently, as the hunting season progresses, lead-sick ducks become more common. Because of their moribund condition they are less alert and are frequently weak fliers. It is likely that hunters harvest a large percent of these sick ducks. Those that venture to the shore to hide in emergent cover are eaten by hogs.

The normal water rise begins soon after the close of the hunting season. After the chufa beds are inundated by four to six feet of water, lead poisoning is not a serious problem. When the chufa beds are shallowly flooded for a long period of time during the presence of a large number of ducks, especially mallards, a "die-off" can be expected. "Die-offs" have been most noticeable following the hunting season during those years when the chufa beds are shallowly flooded for an extended period.

The Louisiana Wild Life & Fisheries Commission, the U. S. Fish and Wildlife Service and the U. S. Corps of Engineers have formulated plans whereby it will be possible to regulate the water level of the lake. This was necessitated by the U. S. Corps of Engineers' plan to provide navigable waters in the Black-Ouachita Rivers.

The normal drainage of the lake will be blocked by an "overtopping" dam constructed near the confluence of French Fork and Little River. A diversion drainage channel will be dug from the lake to Black River. A control structure on this channel near Catahoula Lake will permit regulation of the water level in the lake.

The control structure should be operated in such a manner so as to not appreciably alter the natural water cycle that now exists. Early summer dewatering should be maintained to permit the normal production of waterfowl foods, principally chufa and millet. An earlier dewatering date would lengthen the growing season, thus permitting the invasion of plants that would compete with chufa and millet. A later date would not allow for maximum production of waterfowl foods.

Future management of Catahoula Lake should be directed toward maintaining a balance between all of the previously mentioned interests in a manner much as they are today. ✠

Wild Turkey in Louisiana

(Continued from Page 11)

state. Our deer program was successful because of public support and the Commission feels that the people will react the same to our turkey program.

Strict protection for wild turkey is essential. Birds for release purposes are extremely difficult to obtain and the illegal killing of only one bird can jeopardize a restocking effort.

Contact your local wildlife enforcement agent if you should become aware of any out-of-season turkey hunting. Remember, wild turkeys need protection and even a minimum amount of poaching can hinder the spread and increase of this bird, especially in areas which have been recently restocked or areas supporting remnant flocks of native birds. +

The Bird of the month

PURPLE MARTIN

Progne subis

Charles R. Shaw

THE PURPLE MARTIN is the largest and probably most familiar member of the swallow family to be found in our state. While perhaps not actually purple, the male displays such a dark blue or purplish coloration that it often appears black and indeed the blackish belly sets it off from the other swallows which frequent our area. The wings are long and pointed and the moderately long tail is noticeably forked. While the female also has a blackish back, the forehead and underparts are gray shading into whitish on the belly. The immatures resemble the female.

Starting in early February these congenial friends of man show up in Louisiana on a hunt for housing and pay their rent by consuming untold numbers of flying insects, since like the other members of the swallow family they are specifically adopted for aerial feeding. Only when caught by unseasonably cold rainy weather which grounds the flying insects do they resort to picking their prey from the tops of weeds and bushes or from the surface of the water. Mosquitoes, flies, squash bugs, stink bugs, beetles, tree hoppers, weevils, dragon flies, etc. are consumed readily and constantly so these birds are of considerable economic value.

Due to their good reputation for getting rid of mosquitoes and flies, some towns have sponsored full scale housing campaigns to induce these birds to nest in great numbers and claims are made to the effect that excellent results have been noted, without any ill effects or unfortunate aftermaths to contend with.

It is not known exactly when the Purple Martins first began to favor housing placed for them by people in preference to natural holes in trees and rocky cliffs, but some tribes of Indians in the southeast, placed gourds on poles in their villages to accommodate their feathered friends, before the country was settled by white men.

Modern martin houses come in about as many styles as there are builders, ranging from one or two room dwellings (not too well received by the birds) to those with 12 or 24 or even 36 compartments. Certain basic qualifications should be kept in mind however and the compartments should be about 7 inches in each dimension with a 2½ inch entrance hole located about 2 inches above floor level and the house should be mounted from 10 to 20 feet above the ground in an open area where it can be easily approached from all sides without interference from trees, etc. Plans for building martin boxes are found in many bird books and further information may be secured from the Louisiana Wild Life and Fisheries Commission.

One of the most disturbing factors to the martins is the usurpation of their homes by sparrows and/or starlings. This can be alleviated to a certain extent by keeping the entrances blocked until the arrival date of the martins. However it may be necessary to resort to traps or other means to prevent this disastrous competition.

Although the first wave of Purple Martins arrive early in February and they will inspect the available housing with much twittering and flitting about, actual nesting does not come until somewhat later, usually in April although some of the younger birds may not settle down to housekeeping until May. The nests themselves are composed of grass, weeds, twigs, leaves, etc. The clutch of white eggs ranges in size from 3 to 8, although 4 to 6 is the usual number. Incubation requires a couple of weeks and the young will stay in the nest for another 3 or 4 weeks. During this period incredible numbers of insects are consumed by the martin family.

Vast flocks are formed during August and September and the birds head south again to their wintering grounds in Brazil.

These friendly birds have much to offer of esthetic and economic value, and anyone who goes to the trouble to provide them a home will feel richly rewarded. ✠

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IT'S CRAWFISH TIME IN LOUISIANA-GRAB YOUR NET AND POLE

A Net Filled With Crawfish

The crawfish season is in full swing now and countless thousands of family groups, as well as commercial fishermen will be seeking the tasty "little lobsters." Whether the catch is for a family crawfish boil, famous crawfish bisque, or crawfish etouffe, countless millions will be taken for home consumption and other millions will be shipped to midwest and eastern cities.